

**PENGARUH PUPUK ORGANIK CAIR KOTORAN ULAT HONGKONG
(*Tenebrio molitor*) TERHADAP PERTUMBUHAN DAN PEMBENTUKAN
BINTIL AKAR TANAMAN KACANG PANJANG
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ABSTRAK

Penelitian ini bertujuan untuk mengetahui respon pertumbuhan dan pembentukan bintil akar tanaman kacang panjang terhadap pemberian pupuk organik cair kotoran ulat hongkong dan mengetahui konsentrasi yang optimum pemberian pupuk organik cair kotoran ulat hongkong bagi pertumbuhan dan pembentukan bintil akar tanaman kacang panjang.

Penelitian ini menggunakan rancangan acak lengkap (RAL), terdiri dari satu faktor yaitu konsentrasi pemberian pupuk organik cair kotoran ulat hongkong, dengan 5 taraf perlakuan yaitu konsentrasi 0%, 25%, 50%, 75%, dan 100%, dengan ulangan 5 kali, sehingga terdapat 25 unit tanaman. Hasil pengamatan setiap parameter diuji menggunakan aplikasi SPSS dengan uji *Analysis of Variance* (ANOVA) pada taraf 5%. Apabila tampak pengaruh nyata, dilanjutkan uji *Duncan's Multiple Range Test* (DMRT) pada taraf 5%. Penelitian ini dilaksanakan pada bulan Oktober 2014 – Juni 2015 di *greenhouse* dan Laboratorium Biologi Dasar FMIPA UNY.

Hasil penelitian menunjukkan; (1) Perlakuan konsentrasi 25%, 50%, 75%, dan kontrol tidak berbeda nyata terhadap rerata tinggi tanaman, jumlah daun, jumlah helai daun, panjang akar, bobot basah, dan bobot kering tanaman. Sedangkan perlakuan konsentrasi 100% berbeda nyata terhadap seluruh parameter pertumbuhan. Perlakuan konsentrasi 25%, 50%, 75%, dan 100% tidak berbeda nyata terhadap rerata jumlah bintil akar dan bobot bintil akar. Sedangkan kelompok kontrol memiliki rerata jumlah bintil akar dan bobot bintil akar yang berbeda nyata dengan kelompok perlakuan. Pemberian perlakuan tidak berpengaruh terhadap luas daun dan jumlah bintil akar efektif tanaman kacang panjang (2) Konsentrasi yang optimum bagi pertumbuhan tanaman kacang panjang adalah 25%. Sedangkan konsentrasi yang optimum bagi pembentukan bintil akar adalah 0% atau tanpa pemberian pupuk organik cair kotoran ulat hongkong.

Kata kunci: pupuk organik cair, konsentrasi, kotoran ulat hongkong, tanaman kacang panjang, pertumbuhan, pembentukan bintil akar.

**THE EFFECT OF LIQUID ORGANIC FERTILIZER HONGKONG
WORM (*Tenebrio molitor*) FECES TOWARD THE ROOT NODULES OF
LONG BEANS PLANT'S GROWTH AND FORMATION
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ABSTRACT

The purposes of this research are to investigate the response of growth and formation of the root nodules of Long Beans through giving the liquid organic fertilizer hongkong worm feces and to investigate the optimum concentration of growth and formation of the root nodules of long beans.

This research used the Completely Random Design (RAL), consisted of one factor, a concentration of the liquid organic fertilizer hongkong worm feces was given. The concentration consisted of 5 levels, there were 0%, 25%, 50%, 75%, and 100% concentrations, with five repetitions, so they were 25 plants experiment units. The result of parameters experiment was tested with the SPSS program, using the Analysis of Variance (ANOVA) for 5% levels. If the visible effect was showed, it continued by using *Duncan's Multiple Range Test* (DMRT) on 5% levels. This research begun on October 2014 – Juni 2015 in greenhouse and Biologi Dasar laboratory of FMIPA UNY.

The result of this research show (1) the 25%, 50%, 75% concentrations and control group are not true different with the parameters of the plants' tall average, the total of leaves, the total sheet of leaves, the long of roots, the wet of weight, and the dry of weight. While the 100% concentrations are true different with all of the growth parameters. The 25%, 50%, 75%, and 100% concentrations are not true different with the total of root nodules average, and the nodules weight. While the control group has the total of root nodules average and the nodules weight which are true different with the experiment group. The liquid of organic fertilizer does not give the effect of the wide leaves and the total of long beans effective root nodules (2) the 25% concentration is optimum in growing the long beans, while the 0% concentration is optimum in formatting the root nodule of long beans.

Key word: the liquid organic fertilizer, concentration, hongkong worm feces, long beans plant, growth, formation of root nodules.